

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims.

Listing of Claims:

1. **(Currently amended)** ~~An~~ A repressible insect gene expression system, comprising a first element and a second element on the same construct, wherein the first element comprises least one control factor gene to be expressed and at least one first promoter therefor, the expression of the at least one control factor gene being under the control of the said at least one first promoter; ~~and at least one first promoter therefore~~ and,

wherein the second element comprises a gene of interest to be expressed and at least one second promoter therefore, the expression of the gene of interest being under the control of said at least one second promoter;

wherein an expression product of the control factor gene ~~of the first element~~ to be expressed of said first element serves as a positive transcriptional control factor for both:

- (i) the at least one first promoter in said first element; and
- (ii) the at least one second promoter in said second element,

and whereby ~~the~~ said product, or the expression of the product of the control factor gene, is ~~controllable~~ repressible.

2. **(Currently amended)** The system according to claim 43, 1, wherein a first enhancer is associated with the first promoter, the control factor gene product serving to enhance activity of the first promoter *via* the first enhancer.

3. **(Currently amended)** The system according to claim 2, wherein the control factor is the tTA gene product or ~~an~~ a repressible analogue thereof, and wherein one or more tetO operator units is operably linked with the first promoter and is the first enhancer, tTA or its analogue serving to enhance activity of the first promoter *via* tetO.

4. **(Previously amended)** The system according to claim 3, in which the gene encodes the tTAV or tTAF product.

5. **(Previously amended)** The system according to claim 1, wherein the gene is modified to at least partially follow codon usage in a species in which the system is for use.

6. **(Previously amended)** The system according to claim 1, wherein the promoter is substantially inactive in the absence of the positive transcriptional control factor.

7. **(Previously amended)** The system according to claim 1, wherein the first and/or second promoter is a minimal promoter.

8. **(Previously amended)** The system according to claim 7, wherein the first and/or second promoter is selected from: hsp70, a P minimal promoter, a CMV minimal promoter, an Act5C-based minimal promoter, a BmA3 promoter fragment, an Adh core promoter, and anAct5C minimal promoter, or combinations thereof.

9. **(Previously amended)** The system according to claim 1, wherein the first and/or second promoter is derived from, or is a fragment of, CMV or Hsp70.

10. **(Currently amended)** The system according to claim 1 which substantially reduces fitness when ~~activated~~ or de-repressed.

11. **(Previously amended)** The system according to claim 10, comprising a lethal gene under the control of the first and/or second promoter of the system.

12. **(Previously amended)** The system according to claim 11, wherein the lethal gene is a dominant lethal.

13. **(Previously amended)** A system according to claim 11, wherein the lethal gene and the positive control are the same.
14. **(Previously amended)** The system according to claim 13, wherein the gene is tTA or an analogue thereof.
15. **(Previously amended)** The system according to claim 11, wherein the lethal gene and positive control gene are different.
16. **(Previously amended)** The system according to claim 10, wherein the reduced fitness is a high mortality rate.
17. **(Previously amended)** The system according to claim 1, wherein expression of the positive control gene is selective.
18. **(Previously amended)** The system according to claim 17, wherein expression of the gene is determined by sex.
19. **(Previously amended)** The system according to claim 18, comprising a *doublesex*, *transformer* or sex-specific lethal sequence.
20. **(Previously amended)** The system according to claim 1, wherein an effector gene is operably linked with at least one said promoter.
21. **(Previously amended)** The system according to claim 20, wherein the effector gene is a dominant lethal gene.
22. **(Cancelled)**

23. **(Previously amended)** The system according to claim 20, wherein activation of a promoter to which the effector gene is operably linked leads to a selective effect *via* a transcription or translation product of DNA under the control of the promoter.

24. **(Previously amended)** The system according to claim 17, wherein selection is species specific.

25. **(Previously amended)** The system according to claim 17, wherein selection is developmental stage specific.

26. **(Previously amended)** The system according to claim 1, which is at least one cistron.

27. **(Previously amended)** The system according to claim 26, which is at least two cistrons, said cistrons being linked to an enhancer under the control of the positive control gene.

28. **(Cancelled)**

29. **(Previously amended)** The system according to claim 1, bounded by insulator elements.

30. **(Previously amended)** The system according to claim 29, wherein the insulators are non-identical insulators.

31. **(Withdrawn, previously amended)** The system of claim 1, which is pLA513 as identified by SEQ ID NO. 16.

32. **(Withdrawn, previously amended)** The system of claim 1, which -is JY2004-tTA as identified by SEQ ID NO. 14.

33. **(Previously amended)** A vector comprising the system of claim 1.

34. **(Previously amended)** The vector according to claim 33, further comprising an expression marker.

35. **(Previously amended)** The vector according to claim 34, wherein the expression marker is a fluorescent protein or resistance marker.

36-43. **(Cancelled)**.

44. **(Withdrawn)** The system of claim 17, wherein the expression of the gene is stage specific or tissue specific.

45. **(Withdrawn)** The system of claim 44, wherein the expression of the gene is embryo-specific.

46. **(Withdrawn, currently amended)** The system of claim 45, wherein the expression of the gene is lethal in ~~an~~ an embryo.

47. **(Previously presented)** The system of claim 3, wherein a second enhancer is associated with the second promoter and is the same as the first enhancer associated with the first promoter, the control factor gene product also serving to enhance activity of the second promoter via the second enhancer.

48. **(Previously presented)** The system according to claim 47, wherein the control factor is the tTA gene product or an analogue thereof, and wherein one or more tetO operator units is operably linked with the second promoter and is the second enhancer, tTA or its analogue serving to enhance activity of the second promoter *via* tetO.

49. **(New)** A repressible insect gene expression system (suitable) for use in a

method of insect population control, comprising a first element and a second element on the same construct, wherein
the first element comprises least one control factor gene to be expressed and at least one first promoter therefor, the expression of said at least one control factor gene being under the control of said at least one first promoter; and,
wherein the second element comprises a gene of interest to be expressed and at least one second promoter therefor, the expression of said gene of interest being under the control of said at least one second promoter;
wherein an expression product, of the control factor gene to be expressed of said first element, serves as a positive transcriptional control factor for both the at least one first promoter in said first element and the at least one second promoter in said second element,
with the result that said product of the control factor gene, or the expression of said product of the control factor gene, is repressible.

50. **(New)** A repressible insect gene expression system suitable for use in a method of insect population control, comprising a first element and a second element on the same construct, wherein
the first element comprises least one control factor gene to be expressed and at least one first promoter therefor, the expression of said at least one control factor gene being under the control of said at least one first promoter; and,
wherein the second element comprises a gene of interest to be expressed and at least one second promoter therefor, the expression of said gene of interest being under the control of said at least one second promoter;
wherein an expression product, of the control factor gene to be expressed of said first element, serves as a positive transcriptional control factor for both the at least one first promoter in said first element and the at least one second promoter in said second element,
and whereby said product of the control factor gene, or the expression of said product of the control factor gene, is repressible;.

an enhancer being associated with at least said first promoter, the control factor gene product serving to enhance activity of said first promoter via said enhancer; and wherein the control factor is the tTA gene product or a repressible analogue thereof, and wherein one or more tetO operator units is operably linked with at least said first promoter and is the enhancer; tTA or its analogue serving to enhance activity of said at least first promoter via tetO.

51. **(New)**. The system of claim 50, where in tTA or its analogue serves to enhance activity of said at least first promoter and said second promoter via tetO when de-repressed.

52. **(New)** A repressible insect gene expression system (suitable) for use in a method of insect population control, comprising a first element and a second element on the same construct, wherein the first element comprises least one control factor gene to be expressed and at least one first promoter therefor, the expression of said at least one control factor gene being under the control of said at least one first promoter; and, wherein the second element comprises a gene of interest to be expressed and at least one second promoter therefor, the expression of said gene of interest being under the control of said at least one second promoter; wherein an expression product, of the control factor gene to be expressed of said first element, serves as a positive transcriptional control factor for both the at least one first promoter in said first element and the at least one second promoter in said second element, with the result that said product of the control factor gene, or the expression of said product of the control factor gene, is repressible, and the system, when de-repressed, has a fatal effect on insect embryos or larvae, but not adult insects.